**Final Project Report**

**1. Introduction**

**1.1 Project Overview**

This project, *Power BI Inflation Analysis: Journeying Through Global Economic Terrain*, focuses on understanding global inflation patterns through interactive data visualization. It analyses inflation rates across multiple countries and regions over several years to reveal economic trends, regional differences, and year-over-year changes.

**1.2 Objectives**

* To analyse country-wise and region-wise inflation trends.
* To visualize yearly inflation patterns using interactive charts.
* To identify high, moderate, and low inflation categories.
* To compare adjusted inflation with actual inflation.
* To support policymakers and analysts with clear data-driven insights.

**2. Project Initialization and Planning Phase**

**2.1 Define Problem Statement**

Inflation is a key economic factor affecting global markets, purchasing power, and growth. However, analysing raw inflation data across countries and regions can be complex and time-consuming. There is a need for an interactive visualization system that simplifies this analysis and presents inflation trends clearly.

**2.2 Project Proposal (Proposed Solution)**

The proposed solution is to develop an interactive Power BI dashboard that visually represents global inflation trends using charts, cards, and slicers. The dashboard enables users to filter data by country, region, and year, making it easier to identify patterns and compare inflation performance.

**2.3 Initial Project Planning**

* Tool Used: Microsoft Power BI
* Datasets: Global Inflation Data, Country-Region Mapping Data
* Key Metrics: Inflation Rate, Adjusted Inflation, Region Count, Inflation Category
* Deliverables: Dashboard, Report, and Video Presentation

**3. Data Collection and Preprocessing Phase**

**3.1 Data Collection Plan and Sources**

* **Global Inflation Data** – Contains yearly inflation rates per country.
* **Region Table** – Maps each country to its respective region.  
  Data collected from open-source economic datasets and CSV files.

**3.2 Data Quality Report**

* Handled missing inflation values using averages.
* Cleaned inconsistent country names.
* Ensured data types (numeric, date, text) were correct.

**3.3 Data Exploration and Preprocessing**

* Created new calculated columns: *Inflation Category*, *Inflation Rate Change*.
* Standardized year format for trend analysis.
* Merged both datasets through relationships on country names.

**4. Data Visualization**

**4.1 Framing Business Questions**

* How does inflation vary across years?
* Which countries and regions have the highest inflation rates?
* How are inflation rates distributed globally?
* What is the change in inflation rate year-over-year?

**4.2 Developing Visualizations**

* **Line Chart** – Inflation over years.
* **Bar/Column Charts** – Country and regional comparisons.
* **Donut Chart** – Inflation category distribution.
* **Cards** – KPIs such as Average, Maximum, and Region Count.
* **Scatter Chart** – Comparison between inflation and adjusted inflation.

**5. Dashboard**

**5.1 Dashboard Design File**

* Interactive dashboard created in **Power BI Desktop**.
* Includes slicers for Country, Region, and Year.
* Custom theme with light grey background and blue header.

**6. Report**

**6.1 Story Design File**

* A 1–2-minute video walkthrough created showing key insights and visuals.
* Project presentation includes explanation of data, dashboard design, and insights.

**7. Performance Testing**

**7.1 Utilization of Data Filters**

Used 3 slicers (Country, Region, Inflation Category) for dynamic filtering.

**7.2 Number of Calculated Fields**

* Average Inflation
* Max Inflation
* Inflation Rate Change
* Inflation Category

**7.3 Number of Visualizations**

7 visuals: 3 Cards, 2 Charts, 1 Donut, 1 Scatter.

**8. Conclusion / Observation**

The Power BI dashboard successfully visualized global inflation trends and identified regional variations. Users can easily interpret patterns and inflation categories across years, helping them make informed economic assessments.

**9. Future Scope**

* Add real-time data updates via APIs.
* Include forecasting using Power BI AI visuals.
* Extend the dashboard to cover GDP and Unemployment metrics.

**10. Appendix**

**10.1 Source Code**

* DAX calculations and Power BI file (.pbix)

**10.2 GitHub & Project Demo Link**

* GitHub Repository: https://github.com/maheshchellam24/Power-bi-project-
* Video Demo: https://drive.google.com/drive/folders/1sj8Wu30WC7uvBqDi--BJDGLv\_rV2GloG?usp=drive\_link